Universidad Carlos III de Madrid
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COURSE: Electric Power System Protection		
DEGREE: Bachelor in Electrical Power Engineering	**YEAR: 4th**	**TERM: 1st**

WEEKLY PLANNING

WEEK	SESSION	DESCRIPTION	GROUPS (mark with X)		SPECIAL ROOM (Computer classroom, audio-visual classroom, etc)	Indicate YES/NO if the session needs 2 lecturers	WEEKLY PLANNING FOR STUDENTS		
			LARGE	SMALL			DESCRIPTION	CLASS HOURS	WEEKLY HOURS (Max. 7h/week)
1	1	Course presentation. Introduction to power system protection.		X		NO	Class attendance. Study of class topics. Solution of proposed exercises/tasks.	1,66	7
1	2	Fault analysis. Effect of short-circuit currents. Damage curve of equipments.	X			NO	Class attendance. Study of class topics. Solution of proposed exercises/tasks.	1,66	
2	3	Basic short-circuit calculations.		X		NO	Class attendance. Study of class topics. Solution of proposed exercises/tasks.	1,66	7
2	4	Protective devices for low-voltage systems.	X			NO	Class attendance. Study of class topics. Solution of proposed exercises/tasks.	1,66	
3	5	Exercises about short-circuit calculations.		X		NO	Class attendance. Study of class topics. Solution of proposed exercises/tasks.	1,66	7
3	6	Coordination of protective devices in low-voltage systems.	X			NO	Class attendance. Study of class topics. Solution of proposed exercises/tasks.	1,66	

4	7	Exercises about time-current curves in low-voltage systems.		X		NO	Class attendance. Study of class topics. Solution of proposed exercises/tasks.	1,66	7
4	8	Exercises about coordination of protective devices in low-voltage systems.	X			NO	Class attendance. Study of class topics. Solution of proposed exercises/tasks.	1,66	
5	9	Lab session 1.		X		NO	Class attendance. Study of class topics. Solution of proposed exercises/tasks.	1,66	7
5	10	Current transformers and non-directional overcurrent protection in medium-voltage systems.	X			NO	Previous study about the lab activity. Lab activity. Analysis of results.	1,66	
6	11	FIRST EXAM		X		NO	Study of topics related to the test. Solution of proposed exercises/tasks.	1,66	7
6	12	Coordination of protective devices in medium-voltage systems.	X			NO	Class attendance. Study of class topics. Solution of proposed exercises/tasks.	1,66	
7	13	Exercises about current transformers and time-current curves in medium-voltage systems.		X		NO	Class attendance. Study of class topics. Solution of proposed exercises/tasks.	1,66	7
7	14	Voltage transformers and directional overcurrent protections.	X			NO	Class attendance. Study of class topics. Solution of proposed exercises/tasks.	1,66	
8	15	Exercises about coordination of protective devices in medium-voltage systems.		X		NO	Class attendance. Study of class topics. Solution of proposed exercises/tasks.	1,66	7
8	16	Exercises about coordination of directional overcurrent protections.	X			NO	Class attendance. Study of class topics. Solution of proposed exercises/tasks.	1,66	
9	17	Lab session 2.		X		NO	Class attendance. Study of class topics. Solution of proposed exercises/tasks.	1,66	7
9	18	Distance protection.	X			NO	Previous study about the lab activity. Lab activity. Analysis of results.	1,66	
10	19	SECOND EXAM		X		NO	Study of topics related to the test. Solution of proposed exercises/tasks.	1,66	7

10	20	Other topics about distance protection. Differential protection for transmission lines.	X			NO	Class attendance. Study of class topics. Solution of proposed exercises/tasks.	1,66	
11	21	Exercises about distance protection.		X		NO	Class attendance. Study of class topics. Solution of proposed exercises/tasks.	1,66	7
11	22	Differential protection for power transformers.	X			NO	Class attendance. Study of class topics. Solution of proposed exercises/tasks.	1,66	
12	23	Exercises about other topics related to distance protection and about differential protection for transmission lines.		X		NO	Class attendance. Study of class topics. Solution of proposed exercises/tasks.	1,66	7
12	24	Synchronous generator protection. Other protective systems	X			NO	Class attendance. Study of class topics. Solution of proposed exercises/tasks.	1,66	
13	25	Exercises about differential protection for power transformers.		X		NO	Class attendance. Study of class topics. Solution of proposed exercises/tasks.	1,66	7
13	26	Lab session 3.	X			NO	Previous study about the lab activity. Lab activity. Analysis of results.	1,66	
14	27	THIRD EXAM		X		NO	Study of topics related to the test. Solution of proposed exercises/tasks.	1,66	7
14	28	Real fault analysis, based on oscillograph records (Guest speaker: David López Cortón, REE).	X			NO	Previous study about the selected topics. Discussion with guest speaker.	1,66	
							Subtotal 1	**46,5**	**98**
		Total 1 *(Class hours plus student hours for homeworks, between week 1 and week 14)*						**144,5**	
15		Tutorials, handing in, etc.						5,5	
16		Assessment.							
17									
18									30
							Subtotal 2		**30**
		Total 2 *(Class hours plus student hours for homeworks, between week 15 and week 18)*						35,5	
TOTAL *(Total 1 + Total 2. Maximum 180 hours)*								**180**	